Vertical Diplopia due to Midbrain Infarction

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Picture 1.

Picture 2.

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A 78-year-old woman with hypertension and dyslipidemia developed vertical diplopia and gait disturbance. Neurological examination revealed left-sided partial ptosis, skew deviation, dysarthria, right limb ataxia, and body lateropulsion. Magnetic resonance imaging (MRI) showed a tiny midbrain infarction (Picture 1). Parks' three-step test and Hess charts (Picture 2) confirmed isolated left inferior oblique palsy. A paramedian lower midbrain infarction can involve decussation of the superior cerebellar peduncles and the partial fascicular oculomotor fibers (1, 2). This case suggests that fibers controlling the inferior oblique and levator palpebrae muscles might in part be located adjacent to the muscles. This mechanism could explain her clinical symptoms.

It is possible that MRI can be used to analyze morphological changes in the brain, but functional change might not

be analyzed, whereas ophthalmological assessments by Parks' three-step test and Hess charts are possible. In cases with vertical diplopia, not only brain MRI but also these ophthalmological methods are useful in detecting ocular motor impairment.

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